

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. SCS-550-513

NEVILL

C# M#

Serial No. 10/781,867

TC/A.U.: 2188

Filed: February 20, 2004

Examiner: M. McFadden

Date: November 5, 2007

Title: MEMORY RECYCLING IN COMPUTER SYSTEMS



CW AS

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**☐ **NOTICE OF APPEAL**Applicant hereby **appeals** to the Board of Patent Appeals and Interferencesfrom the last decision of the Examiner twice/finally rejecting  
applicant's claim(s).

\$510.00 (1401)/\$255.00 (2401) \$

☐ An appeal **BRIEF** is attached in the pending appeal of the  
above-identified application

\$510.00 (1402)/\$255.00 (2402) \$

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ( )

☒ A reply brief is attached.

(no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this  
paper and attachment(s)

One Month Extension \$120.00 (1251)/\$60.00 (2251)

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Three Month Extensions \$1050.00 (1253)/\$525.00 (2253)

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**TOTAL FEE ENCLOSED \$ 0.00**

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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Signature: 



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**REPLY BRIEF**

This Reply Brief is responsive to the Examiner's Answer mailed September 4, 2007, the date of response to which is November 5, 2007 (November 4 falling on a Sunday). The Examiner's Answer cites a new previously undisclosed reference (Gupta) and raises new issues not previously addressed which are responded to as follows.

**Interviews between Appellant's counsel and PTO personnel.**

The Examiner filed an initial Examiner's Answer on August 9, 2007 and Appellant's undersigned representative contacted the Examiner, SPE Sough and the Appeal Specialist Mona Padmonium (sp?) on August 15-16, 2007. The undersigned pointed out that only a newly cited reference ("Gupta") was set forth in the "(8) Evidence Relied Upon" portion of

the Examiner's Answer, although other references such as Wilson and Hosoya were still relied upon in the Examiner's Answer. Past experience has shown that the Examiner's failure to properly cite the evidence relied upon will result in further delays of the Board's decision in an appealed case and therefore Appellant requested that a corrected Examiner's Answer be issued.

SPE Sough on August 16, 2007, indicated that the Examiner would mail a corrected Examiner's Answer and that he would confirm this in an Interview Summary Record. The Interview Summary Record was mailed August 27, 2007 and a corrected Examiner's Answer was mailed on September 4, 2007.

However, while the current Examiner's Answer references both "Wilson" and "Hosoya" under section "(8) Evidence Relied Upon," the reference to the newly cited "Gupta" reference has been omitted. Appellant understand that this will result in additional delays by the PTO in considering this Appeal. Accordingly, immediate correction of the Examiner's Answer, to the extent the Examiner is still relying upon Wilson, Hosoya and Gupta, is respectfully requested.

**A. Neither Wilson nor any other prior art reference discloses  
"suspending an actual execution path of said processing task at  
an execution point"**

Beginning on page 9 of the Examiner's Answer, the Examiner purportedly responds to the Appeal Brief argument section A extending over pages 13-15 of the Appeal Brief. Appellant's Brief pointed out that the Wilson reference (the only reference cited in the rejection under 35 USC §102) fails to teach the step of "suspending." However, perhaps

prompted by Appellant's Brief noting that the Examiner failed to follow the requirements of Section 2144.03 of the Manual of Patent Examining Procedure (MPEP) (this same objection was set forth in Appellant's previously filed Amendment, to which the Examiner responded by failing to cite any supporting reference in the Final Rejection of October 20, 2006), the Examiner finally complied with the MPEP by citing Gupta in the Examiner's Answer.

Turning to the merits of the Examiner's arguments in response to Appeal Brief argument A, it appears that the Examiner is citing the new Gupta reference as disclosing pauses in execution in order to perform garbage collection. The Examiner references Gupta's disclosures in Figures 1, 2 and 3 showing "execution paths and the 'stop-the-world pause' caused by garbage collection schemes" and "Gupta shows that even concurrent mark-sweep collectors contain a pause in execution."

However, it appears that the Examiner continues to miss the mark of argument A which discusses "suspending an actual execution path of said processing task at an execution point." Appellants claim does not merely state "suspending an execution path" because Gupta arguably teaches a pause in the execution path. However, neither Gupta nor any other reference teaches any disclosure of suspending the execution path in order to accomplish specific tasks, i.e., "to perform memory management" or where the memory management task performed comprises the recited steps of "identifying," "determining" and "performing."

The Examiner's argument in heading A on pages 9 and 10 of the Answer merely assumes that Gupta's "pause" is a disclosure of all pauses, and ignores the claim limitations as to steps which take place during the pause.

The independent claims require “suspending an actual execution path of said processing task at an execution point to perform memory management, said memory management comprising” the three identified steps. There is no indication that Gupta performs the three-step memory management process identified in claim 1, i.e., the steps of “identifying,” “determining” and “performing.” Accordingly, Gupta does not supply the missing disclosure (clearly missing in the Wilson reference) in order to anticipate independent claims 1, 11, 21 and 31-33.

Additionally, the Examiner rejects the independent claims as being anticipated by Wilson and yet neither Wilson nor Gupta disclose this claimed step. As noted in the *Lindemann* case in Appellant’s Brief, anticipation requires the presence “in a **single prior art reference**” the disclosure of “each and every element of the claimed invention, arranged as in the claim” (emphasis added). Wilson, as admitted by the Examiner, clearly does not teach each and every method step set out in Appellant’s independent claims and therefore the rejection under §102 fails.

Should the Examiner conclude that the independent claims are obvious in view of a combination of Wilson and Gupta, it is further noted that neither Wilson (as noted in section A of the Appeal Brief) nor Gupta (as noted above) teaches the claimed step of “suspending” which requires the memory management sequence of the steps of “identifying,” “determining” and “performing.” Because these memory management steps are not disclosed in either Wilson or Gupta, even the combination of these two references would not render obvious the subject matter of the independent claims.

Accordingly, the Examiner has not properly identified the relied-upon references, has not rebutted the Appeal Brief argument against a rejection under §102 and has not even set forth a *prima facie* basis for any future obviousness rejection under 35 USC §103.

**B. Since Wilson does not teach suspension of the processing task, he cannot teach the method step of "identifying at least one data item roots occurring in the course of execution and accessible to said processing task at said execution point"**

The Examiner responds to the second argument in the Appeal Brief on page 10 of the Examiner's Answer by merely arguing that Wilson does operate "during execution and does perform a suspension step" and somehow Wilson "does teach an identification step as previously stated in the rejection."

As will be clear from reading Appellant's independent claims, the three steps of "identifying," "determining" and "performing" all occur during the "suspending an actual execution path of said processing task at an execution point" since they are the steps in the "memory management" which is performed at that time. Because, as the Examiner has argued above, Wilson fails to teach any suspension during the processing task (although he argues this is disclosed in Gupta), it would be impossible for Wilson to suggest the three-step "memory management" process specifically set out in Appellant's independent claims.

The Board's attention is directed to the "identifying" step which requires that the identifying be of "at least one data item roots occurring in the course of execution." This "identifying" step, as clearly set out in the claim, is part of a "memory management" step which is performed once an actual execution path has been suspended. However, the

identification occurs in a dynamic manner and the benefit of this is set out in Appellant's specification, page 6, line 30 to page 7, line 10. The claim essentially requires the suspending of an actual execution path and performing a memory management process at that time. Part of the memory management process is the step of identifying "at least one data item roots occurring in the course of execution."

There is simply no disclosure in either Wilson or Gupta of a suspension step in which memory management occurs and in which the memory management includes identifying "at least one data item roots occurring in the course of execution."

The Examiner may argue that this is somehow disclosed in Gupta. Gupta does disclose, as noted above, pauses in execution in order to perform garbage collection. However, Gupta is completely silent on the issue of data item root identification. As in the Wilson reference, one having only ordinary skill would understand that this garbage collection (whether carried out by Gupta's parallel collector or concurrent mark-sweep collector) would involve using static data to work out the roots. The static data would either have been created at verification time prior to execution or by keeping track of each stack write operation and tagging stack slots (as described in Appellant's present specification at page 5, line 29 to page 6, line 6).

This lack of an identifying step in either Wilson or Gupta unravels the Examiner's arguments not only with respect to sections A and B of the Appeal Brief, but in sections C-E as well. Neither Wilson nor Gupta disclose "identifying at least one data item roots occurring in the course of execution . . . ."

In view of the above responses, the Examiner's Answer does not supply the elements or the information noted to be missing in the Final Rejection. The Examiner has not met his burden of proof of establishing where the Wilson reference teaches all of the method steps set out in the independent claims and therefore fails to anticipate or render obvious the subject matter of those claims. The Examiner has further failed to identify where the Gupta reference provides any disclosure of the missing elements or method steps. Moreover, the Examiner has failed to meet the burden of setting out a *prima facie* case of obviousness as noted in the Appeal Brief and reiterated above.

Appellant has not exercised its right to request an Oral Hearing because on the current record, the Appeal Brief clearly identifies claimed elements and/or method steps which are simply not present in the cited references, or at least the Examiner identified where the missing elements/steps are disclosed. Accordingly, the additional applicant expense of requesting and attending an Oral Hearing in this matter is not believed to be warranted.

As a result of the above and the previously submitted Appeal Brief, there is simply no support for the rejection of Appellant's independent claims 1, 11, 21 and 31-33 or claims dependent thereon, either under 35 USC §102 or §103. Thus, and in view of the above, the rejections of claims 1-33 under 35 USC §§102 and 103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

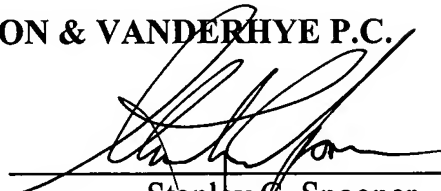


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Respectfully submitted,

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